

ECOLOGY AND ENVIRONMENT, INC.
REGION VI
MEMORANDUM

TO: Keith Bradley, RPO

FROM: Hunt Chapman, FIT-Chemist *GHE*

THRU: ^{for} K. Malone, Jr., RPM *jpt*

DATE: June 13, 1985

SUBJ: Sampling Mission to U.S. Gypsum, Corsicana, TX (TX10022)
TDD# R6-8409-09

hm
Reviewed by 6AW-SC
DOB date *7/2/85*

TXD001354392

On December 17, 1984, a sampling mission was conducted at U.S. Gypsum Co., 1100 Hardy Ave., in Corsicana, TX. The FIT sampling team consisted of Team Leader Hunt Chapman, and team members Miles Bolton, Bernard Cousins and Lloyd Collins. The purpose of the sampling was to characterize the site as a result of elevated metals concentrations found in an earlier off-site reconnaissance sample. A total of eight samples were taken (see site sketch and Table II for sample locations and photographs).

Based on the analytical results of samples taken at stations 02 and 07, the waste material itself contains high levels of several metals of concern. These include antimony, arsenic, beryllium, chromium, cobalt, copper, iron, lead, manganese, nickel, tin, vanadium, and zinc. The offsite sample taken at station 03 contains elevated levels of zinc and lead. It seems unlikely that these elevated levels are a result of leachate run off from the landfill since the ground level there is approximately 5 feet higher than the base of the landfill. This sample was originally intended to be representative of the background soil concentrations for the area; however, the elevated levels of lead and zinc preclude using this for background. Due to lower metals concentrations, the sample taken at Station 01 seems to be a better example of background concentrations even though it is on site.

The drainage ditch sample at Station 04 contains elevated concentrations of arsenic, copper, lead, tin and zinc compared to ambient background levels of these elements ("Element Concentrations in Soils and Other Surface Materials of the Conterminous United States", 1984, U.S.G.S. Paper 1270). Sample 08 is from a natural drainage basin leading from the manufacturing plant and from the location of ponds that have since been drained. The levels of arsenic, lead and zinc from this sample are higher than all other samples except from the samples of the actual waste material itself. The sample taken at station 05 is off-site in a road side ditch that receives drainage from the area of Station 08. It has elevated levels of arsenic and zinc compared to ambient background levels of these elements.

SUPERFUND FILE

SEP 08 1992

REORGANIZED

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The analytical results for samples 04 and 08 indicate that contamination exists in the drainage basins on the site. However, because of the elevated zinc level in the background sample, it is not clear if contamination has reached off site to stations 05 and 06.

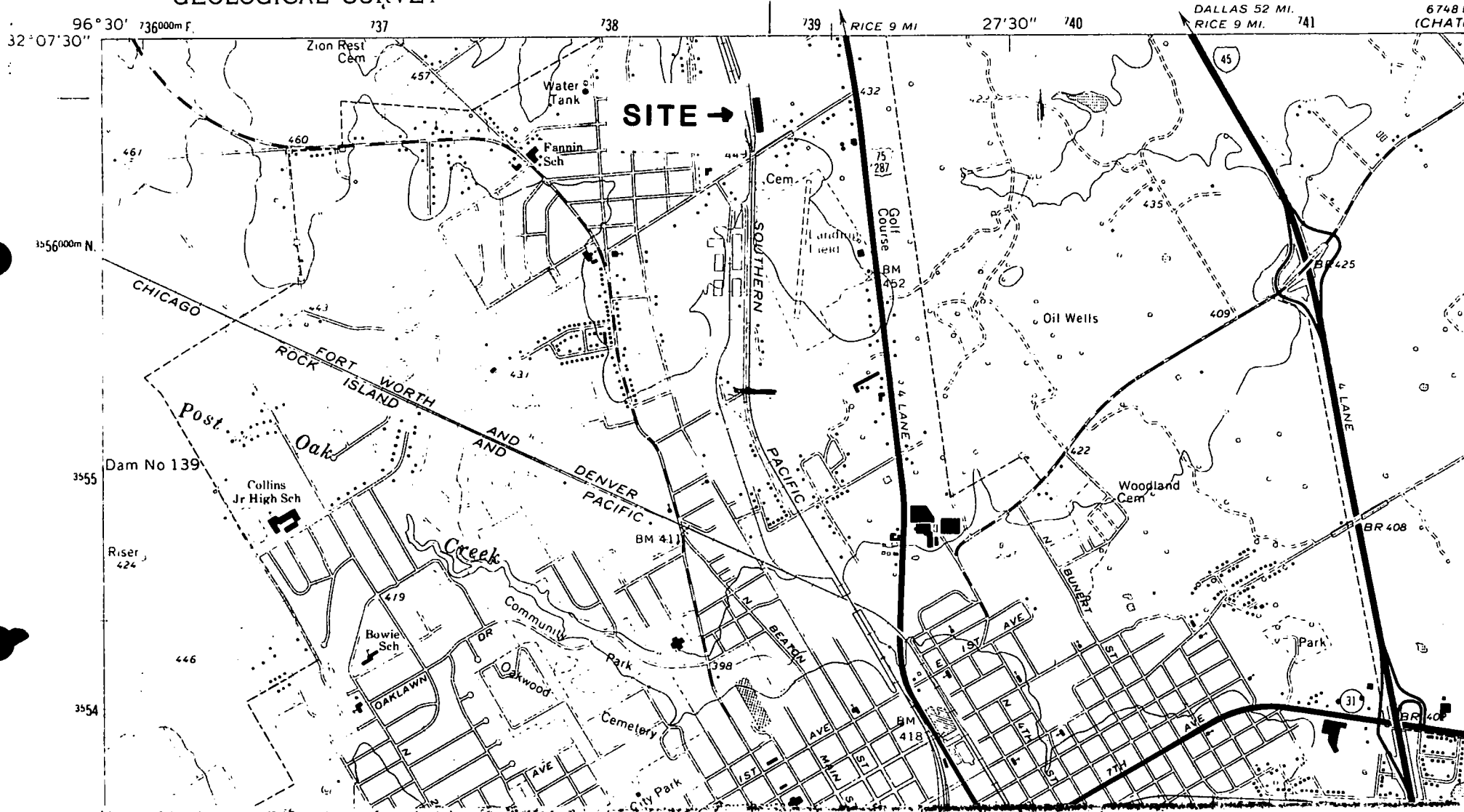
It seems unlikely that the elevated zinc level in Station 03 could be a result of run off from the site since it is on higher ground. One other possibility is stack emissions from the manufacturing plant. Reliable background soil concentrations are needed to determine if contamination is present off-site from either run-off or stack emissions. Therefore, the FIT recommends further off-site sampling to make these determinations. The proposed sampling plan is included in the site sketch of the facility.

6648 II NE
(EMHOUSE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



07' 22"



"Location of U.S. Gypsum Co."

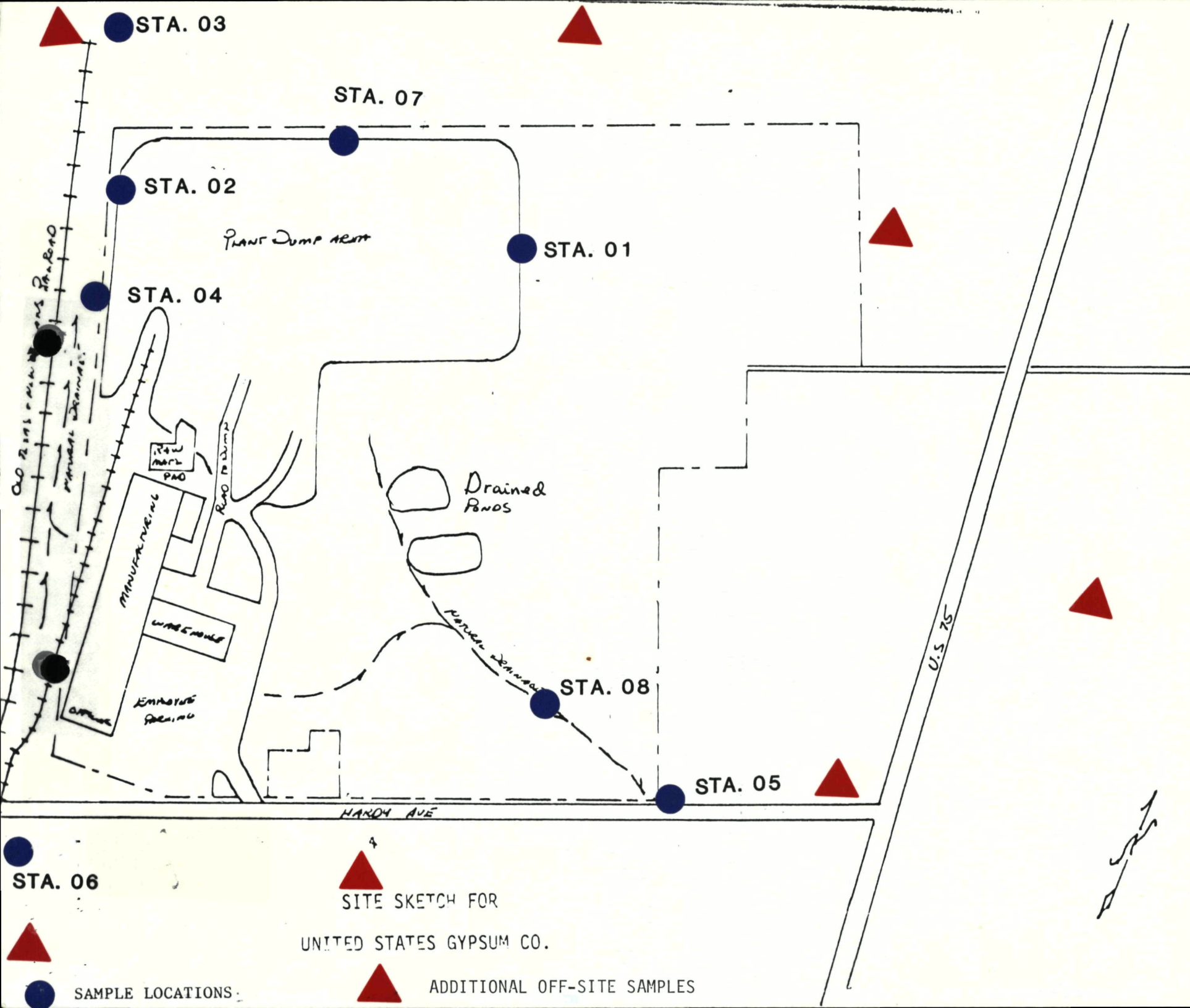


TABLE I . INORGANIC ANALYSIS SUMMARY

Page 1 of 1CASE NUMBER: 3663SITE NAME/CODE: U.S. Gypsum Co.

PARAMETER	CONCENTRATIONS (ppm)										Ambient Background 1.	
	EPA Sample Numbers										Western U.S. 2.	Eastern U.S. 2.
	MF1865	MF1866	MF1867	MF1868	MF1869	MF1870	MF1871	MF1872	MF1873		Soil	Soil
Matrix Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Blank		Soil	Soil
Aluminum	9640	41500	10200	13100	6480	10700	40400	14800			58,000	33,000
Antimony		31					241				.47	.52
Arsenic R		558	9.6	40	18	9.8	6780	110			5.5	4.8
Barium	35	415	378	104	118	206	273	133	.74		580	290
Beryllium		5.6	1.2	1.2		1.2	5.0	1.5			0.68	0.55
Cadmium											<1	<1
Chromium	9.9	61	6.5	13	5.8	16	55	9.7			41	33
Cobalt		121	4.8	8.8		5.6	140				7.1	5.9
Copper		774	16	92		37	1050	10			21	13
Iron	7310	62700	8850	11900	6190	12900	60600	9260	9.4		21,000	14,000
Lead R	16	1930	50	444	14	34	21900	120			17	14
Manganese	24	1660	140	190	147	143	1290	203			380	260
Mercury											0.046	0.081
Nickel		40					65				15	11
Selenium R							18				.23	.30
Silver											-	-
Thallium											9.1	7.7
Tin R		70		27			229				.90	.96
Vanadium	16	52	12	18	11	20	43	20			70	43
Zinc *R	47	7490	233	1100	174	181	18300	700			55	40
Zinc Oxide												
Calcium	2950	149000	9510	16600	9060	7760	145000	5980				
Magnesium	1180	21300	1620	2830	1080	2360	22000	1690	1.7			
Potassium	995	5240	835	1530	1720	1330	4530	1900	324			
Sodium	256	2030	104	273	189	147	2200	249				
Station No.	01	02	03	04	05	06	07	08	Blank			
Sample Station Location	10' EAST OF LANDFILL	WASTE MATERIAL, N.W. CORNER OF LANDFILL	50' NORTH OF SITE AT N.W. CORNER	WEST SIDE OF LANDFILL IN DRAINAGE DITCH	DRAINAGE PATH OFF-SITE 50' W. OF PROPERTY LINE	SOUTH OF HARDY RD. ON EAST SIDE OF R.R. TRACK	WASTE MATERIAL FROM N. SIDE OF LANDFILL	DRAINAGE PATH ≈ 1000' E. OF PLANT	RINSEATE BLANK		1. Values obtained from "Element Concentrations in Soils and Other Surface Materials of the Conterminous United States", dated 1984. U.S.G.S. Professional Paper 1270. 2. Reference for East/West Division is the 96°W longitudinal line which bisects Region VI.	

E - indicates a value estimated or not reported due to the presence of interference.

R - spike sample recovery is not within control limits.

* - duplicate analysis is not within control limits.

2/12/85

TABLE II

Sample Station Locations

Station 01	10 feet east of the landfill adjacent to an apparent rain water run-off path at the approximate midpoint of the eastern edge of the landfill. The sample was taken at a 9 inch depth (see Photo #2).
Station 02	The northwest corner of the landfill at a depth of 9 inches. This is a sample of the waste material (see Photo #3).
Station 03	50 feet north of the property line at the northwest corner of the site (see Photo #4).
Station 04	West side of landfill in a drainage ditch on-site, next to the landfill at a depth of 6 inches (see Photo #5).
Station 05	Drainage ditch on the north side of Hardy Rd. 50 feet west of the southwestern property line of the site at a depth of 6 inches. This ditch is a continuation of the natural drainage from the site (see Photo #6).
Station 06	75 feet south of Hardy Rd. on the east side of the railroad tracks in a drainage ditch 3 feet from the tracks at a depth of 1 foot (see Photo #7).
Station 07	North side of the landfill at a depth of 6 inches. This represents the actual waste material (see Photo #8).
Station 08	Natural drainage path approximately 1000 feet east of the manufacturing plant at a depth of 6 inches (see Photo #9).



Photographer / Witness

Hunt Chapman / Bernard Cousin

Date / Time / Direction

12/17/84 - 1045 - Southwest

Comments: Sampling Station

01 on the east side
of the landfill.

Photo # 2



Photographer / Witness

Hunt Chapman / Bernard Cousin

Date / Time / Direction

12/17/84 - 1113 - facing East

Comments: Sampling Station 02

on the NW corner of the
landfill.

Photo # 3



Photographer / Witness

Hunt Chapman / Bernard Cousin

Date / Time / Direction

12/17/84 - 1120 - facing SE.

Comments: Station 03 50'

north of site at the NW
corner. (Off-site station)

Photo # 4



Photographer / Witness

Hunt Chapman / Bernard Cousin

Date / Time / Direction

12/17/84 - 1155 - facing SE

Comments: Station 04 on the
west side of landfill in
drainage ditch.

Photo #5

Photographer / Witness

Date / Time / Direction

Comments:

Photographer / Witness

Hunt Chapman / Bernard Cousin

Date / Time / Direction

12/17/84 - 1220 - facing West

Comments: Station 05. Drainage
path off site 50 ft west
of property line.

Photo #6





Photographer / Witness

Hunt Chapman / Bernard Cousin

Date / Time / Direction

12/17/84 - 1235 - facing North

Comments: Station 06 75 ft.

South of Hardy Rd on the
East side of railroad tracks.

Photo # 7

Photographer / Witness

Date / Time / Direction

Comments:



Photographer / Witness

Hunt Chapman / Bernard Cousin

Date / Time / Direction

12/17/84 - 1305 - facing South

Comments: Station 07 North
side of landfill.

Photo # 8



Photographer / Witness

Hunt Chapman / Bernard Cousin

Date / Time / Direction

12/17/84 - 1315 - facing south

Comments: Station 08. Drain-
age path approx. 1000 ft.
East of plant.

Photo # 9

Photographer / Witness

Date / Time / Direction

Comments: _____

Photographer / Witness

Date / Time / Direction

Comments: _____

8-10-67-1117

